

Application Number: 10/517,674
Amendment Dated: February 19, 2008
Reply to Office Action Dated August 17, 2007

REMARKS

This paper is responsive to the Office Action dated August 17, 2007, for which a three (3) month period of response was given. A Petition and fee for a three (3) month extension of time accompany this paper. Since February 17, 2008 was a Sunday and since February 18, 2008 was a Federal Holiday (president's Fay), this paper and any accompanying papers are timely filed on February 19, 2008. No additional claim fees are believed to be due. However, should further additional claim fees be due, the Commissioner is hereby authorized to treat this paper as authorization to charge any necessary fees due to Deposit Account No. 50-0959, Attorney Docket No. 089498.0439.

Also enclosed herewith is a Request for Continued Examination (RCE). The Commissioner is hereby authorized to fees due with regard to the above-mentioned RCE to Deposit Account No. 50-0959, Attorney Docket No. 089498.0439.

Claims 1, 3, 4 and 7 through 17 are pending in the present application upon entry of the amended claims shown above. Claims 14 through 17 have been added. Support for newly added claims 14 through 17 can be found in the specification as filed. As such, no new matter has been added.

Accordingly, entry and consideration of the above-mentioned amended claims set is believed due, and is respectfully requested.

I. The 35 U.S.C. §103(a) Rejections:

Claims 1 and 3 have been rejected under 35 U.S.C. §103(a) over the combination of Yoon et al. (United States Patent No. 6,160,382) and Yamamoto et al. (United States Patent No. 4,360,762).

With regard to Yoon et al., this patent discloses a method and apparatus for determining characteristic parameters of a charge storage device based on a frequency range of impedance measurement and a non-linear equivalent circuit model. Furthermore, the Examiner contends Yoon et al. discloses control means that use a separate voltage/current generator to charge the storage device directly, so that the voltage/current generator outputs a predetermined voltage and current thereby charging a

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charge storage device via the control means. Given the above, the Examiner contends that Yoon et al. discloses all of the elements of claims 1 and 3 except for the step of determining a charge-discharge behavior of a structure in a voltage-charge plane. The Examiner, however contends that Yamamoto et al. cures this deficiency of Yoon et al. Applicants respectfully disagree.

Turning to Yamamoto et al., Yamamoto et al. discloses an improved starter switch for a fluorescent lamp. In particular, Yamamoto et al. relates to a starter switch which fires a fluorescent lamp very quickly. Specifically, the Examiner contends that Yamamoto et al. discloses a non-linear capacitor and the relationship between the voltage and charge of such a capacitor and that one of ordinary skill in the art would be motivated to combine the method/apparatus of Yoon et al. with combine the method/apparatus of Yamamoto et al. to arrive at the invention as presently recited in claims 1 and 3.

However, the above analysis ignores some very important factors that are clearly evident from the cited art. To begin with, absent impermissible hindsight one of ordinary skill in the art would not have been motivated to combine the method/apparatus of Yoon et al. with combine the method/apparatus of Yamamoto et al. This is because, as is stated clearly in Yamamoto et al., the non-linear capacitor and the relationship between the voltage and charge of such a capacitor documented in Figure 2A thereof is solely utilized to provide stable firing operation of a fluorescent lamp. Accordingly, one of ordinary skill in the art would not have been motivated upon reading and understanding Yamamoto et al. to combine its teachings with those of Yoon et al.

As was recently stated by the Supreme Court in KSR International Co. v. Teleflex Inc., et al., 127 S. Ct. 1727 (2007), hindsight is still impermissible to reach a conclusion of obviousness under the test set forth in Graham v. John Deere Co. of Kansas City, 383 U. S. 1 (1966). Given the disparity between the aims of Yoon et al. and that of Yamamoto et al. one of ordinary skill in the art would not have been motivated to combine the two absent impermissible hindsight.

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Thus, for at least the above reasons, claims 1 and 3 are patentable over the combination of Yoon et al. and Yamamoto et al. As such, withdrawal of the obviousness rejection of claims 1 and 3 is believed due and is respectfully requested.

Claims 4 and 7 through 13 have been rejected under 35 U.S.C. §103(a) over Yoon et al. (United States Patent No. 6,160,382) in view of Gartstein et al. (United States Patent No. 6,118,248). Regarding Yoon et al. the teachings and shortcomings thereof are detailed above.

Given the above, Yoon et al. clearly fails to disclose, teach or suggest a re-charging controller for an electrical storage device that utilizes, among other components, an observer component which receives a correction signal and an input signal to generate an estimated output signal and an estimated internal state signal, wherein the correction signal represents a real-time estimate of the amount of damage being done to the electrical storage device during re-charging (emphasis added).

Turning to Gartstein et al., Gartstein et al. discloses a rechargeable battery having a built-in controller that is designed to extend the service run time of the battery. In one embodiment, the controller of Gartstein et al. may extend the service run time of a rechargeable battery, for example, by ending the discharge cycle at the optimal discharge depth in order to maximize the number and efficiency of charge cycles. Given the above, the Examiner contends that Gartstein et al. cures the deficiencies of Yoon et al. and thus renders claims 4 and 7 through 13 obvious. Applicants respectfully disagree.

As would be apparent to one of ordinary skill in the art, upon reading and understanding Gartstein et al., Gartstein et al. fails to disclose, teach or suggest a recharging controller for an electrical storage device that comprises, among other components, an observer component which receives a correction signal and an input signal so as to generate an estimated output signal and an estimated internal state signal, wherein the correction signal represents a real-time estimate of the amount of damage being done to the electrical storage device during recharging.

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This is because, as would be recognized by one of ordinary skill in the art, Gartstein et al. minimizes damage to a battery by using a lowest cutoff voltage for discharging, or lowest state-of-charge. As such, one of ordinary skill in the art would recognize that the disclosure of Gartstein et al. fails to teach or suggest the optimization of the entire charge profile of a battery. Additionally, Gartstein et al. does not disclose, teach or suggest determining characteristic parameters, rather Gartstein et al. just estimates the state-of-charge.

For at least the above reasons, one of ordinary skill in the art would recognize that Gartstein et al. clearly fails to disclose, teach or suggest an instantaneous damage rate sensor, or real-time damage estimates. Given this, Gartstein et al. cannot control the charging or discharging profile of a battery in the manner accomplished by the presently claimed invention as recited in pending claims 4 and 7 through 13.

Thus, for at least the above reasons, claims 4 and 7 through 13 are patentable over the combination of Yoon et al. and Gartstein et al. As such, withdrawal of the obviousness rejection of claims 4 and 7 and 13 is believed due and is respectfully requested.

II. Newly Added Claims 14 – 17:

Regarding newly added claims 14 through 17, it is noted that none of the art made of record discloses the subject matter of these claims when viewed in the context of their dependency from pending claims 1 and 4. As such, claims 14 through 17 should be found allowable over all of the art made of record.

III. Conclusion:

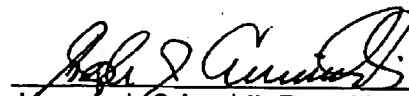
Accordingly, reconsideration and withdrawal of the pending objections and art rejections of claims 1, 3, 4 and 7 through 13 is respectfully requested.

For at least the foregoing reasons, the present application is believed to be in condition for allowance, and a Notice of Allowance is respectfully requested.

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Should the Examiner wish to discuss any of the foregoing in more detail, the undersigned attorney would welcome a telephone call.

Respectfully submitted,



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